

## **REMARKS**

### **I. Status of Claims**

With amendments submitted herewith, claims 1-18 are pending in the application.

Claims 1, 5 and 13 are the independent claims.

Without waiving any argument, and to advance prosecution, claim 9 is amended to clarify the claim language and method claims 12-18 are added. Support for the method claims 12-18 may be found, *inter alia*, in claims 5-11 as previously presented. No new matter is introduced.

Claims 2 and 5-11 stand rejected under 35 USC 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 4 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Komatsu et al. (US 5,795,580) (hereafter "Komatsu") in view of Saito et al. (US 2003/0118891) (hereafter "Saito") and Kato et al. (US 6,377,880) (hereafter "Kato").

Claims 2 and 3 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Komatsu in view of Saito and Kato, and further in view of Soo (US 5,548,206) (hereafter "Soo") and further in view of Duncan et al. (US 4,870,863) (hereafter "Duncan").

Claims 5-11 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Komatsu in view of Saito.

The Applicant respectfully requests reconsideration of these rejections in view of the following remarks

### **II. Specification**

The Office Action objects to the title as being not descriptive and requires a new title that is clearly indicative of the invention to which the claims are directed. Accordingly, without waiving any argument, and to advance prosecution, the title of the application has been amended to be clearly indicative of the invention to the which the claims are directed.

Further, paragraphs [0066] and [0103] of the application as published (US Pat. Pub. 2007/0178346) are amended. The amendments are to correct typographical errors and no new matter is introduced.

### III. Applicant's Statement of Substance of Examiner Interview

In compliance with M.P.E.P. 713.04, the Applicant provides this Statement of Substance of Interview concerning the interview conducted on January 28, 2010 with Examiners Ken Douyette and Jonathan Crepeau, and Applicant's representative Xiaomin Huang.

- (A) Exhibits. N/A.
- (B) Claim(s). 1 and 5
- (C) References Discussed: Komatsu and Saito.
- (D) Amendments. Claim 9 and proposed new method claim 12.
- (E) Principal arguments of Applicant: Komatsu's structure (FIGS. 9 and 63B) does not show a coolant passage through the battery; Saito's temperature sensors (as shown in FIG. 1 of Saito) are generally located in the vicinity of the battery and Saito does not show distribution of the temperature sensors to be upstream/downstream of a coolant path.
- (F) Other matters: N/A.
- (G) Results. Agreement was not reached.

### IV. Pending Claims

#### a. Claim Objections

Claims 2 and 5-11 stand rejected under 35 USC 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Office Action asserts that "claims 2, 5, 8 and 9, all recite an operation occurring when 'cooling ... is unnecessary'. It is unclear exactly what this means, since an operation would also be unnecessary when the device is off."

Certain embodiments of the present invention provide a power supply device that contains two voltage generators. The two voltage generators may share a discharge path but each has its own coolant path. In at least one embodiment, a control circuit 50 may turn on the cooling fan 30 (for the secondary battery) to operate in an auxiliary manner (shown as Y1 in FIG. 3) after the cooling fan 40 (for the DC/DC converter) is turned on even when temperature of the secondary battery 10 is not high enough to need cooling. Thus, in each of the claims 2, 5, 8 and 9, the claim recites operating one cooling system and at the same time operating another cooling system even if cooling is not necessary for the other cooling system to run. Thus, it is clear and

unambiguous that the “power supply device” is “on” although the cooling of the secondary battery may be unnecessary. If the device is off, none of the cooling system would be operating.

Accordingly, although an operation would also be unnecessary when the device is “off,” the claim language of claims 2, 5, 8 and 9 clearly and unambiguously does not concern that situation. Thus, the 112, second paragraph rejections of claims 2 and 5-11 are improper and should be withdrawn.

**b. Rejections Under 103(a)**

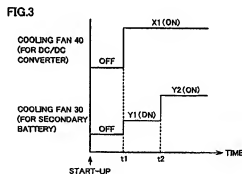
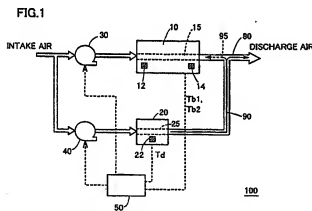
Independent claim 1 stands rejected under 35 USC 103(a) as allegedly being unpatentable over Komatsu in view of Saito and Kato. Independent claim 5 stands rejected under 35 USC 103(a) as allegedly being unpatentable over Komatsu in view of Saito.

It is respectfully submitted that claim 1 is patentable over Komatsu, Saito and Kato at least because it recites, *inter alia*, “**a first voltage generator having a first coolant path** allowing a coolant for cooling the first voltage generator to pass therethrough;...” and “**a first temperature sensor** attached to said first voltage generator; **a second temperature sensor** attached to said first voltage generator **on the coolant discharge side** of said first coolant path, relative to said first temperature sensor ; ...” (emphasis added)

It is respectfully submitted that claim 5 is patentable over Komatsu and Saito at least because it recites, *inter alia*, “**...a first voltage generator having a first coolant path** allowing a coolant for cooling the first voltage generator to pass therethrough; ...” and “when said control circuit operates one cooling system of said first and second cooling systems, **said control circuit also operating the other cooling system of said first and second cooling systems even when cooling** of the voltage generator corresponding to said other cooling system **is unnecessary.**” (emphasis added)

Certain embodiments of the present invention provide a power supply device that contains two voltage generators. The two voltage generators may share a discharge path but each has its own coolant path. As shown in FIG. 1 of the application, which is reproduced below,

a first voltage generator may be a secondary battery 10 that includes a coolant path 15 and a second voltage generator may be a DC/DC converter 20 that includes a coolant path 25. In at least one embodiment, the secondary battery 10 may include two temperature sensors 12 (in proximity to cooling fan 30) and 14 (in proximity to the discharge side). Further, in one embodiment, as shown in FIG. 3 reproduced below, a control circuit 50 may turn on the cooling fan 30 (for the secondary battery) to operate in an auxiliary manner (shown as Y1 in FIG. 3) after the cooling fan 40 (for the DC/DC converter) is turned on even when temperature of the secondary battery 10 is not high enough to need cooling. See paragraph [0063] of the published application (US 2007/0178346). The "ON" stage Y1 prevents a backflow in the shared discharge path (shown as the dotted line for backflow component 95 in FIG. 1). Therefore, independent claim 1 requires that *"a first voltage generator having a first coolant path ...; a second temperature sensor attached ... on the coolant discharge side of said first coolant path, relative to said first temperature sensor."* And independent claim 5 requires *"a first voltage generator having a first coolant path...;"* and *"said control circuit also operating the other cooling system of said first and second cooling systems even when cooling of the voltage generator corresponding to said other cooling system is unnecessary."*



The Komatsu reference describes an air-cooled information processing apparatus, i.e., a computer, with a case accommodating a plurality of units. The Office Action alleges that Komatsu discloses a first voltage generator 11 and a first coolant path 740. However, as shown in FIG. 9 of Komatsu reproduced below, the battery 11 is located at the bottom of the computer

case and has nothing to do with the alleged coolant path 740. Further, as shown in 63B of Komatsu, also reproduced below, the “batteries 11 are, by a battery cover 61, insulated from other structures so as to be *free from the flow of cooling air*.” See Komatsu, col. 37, ll. 61-63, emphasis added. Thus, there is nothing in Komatsu discloses or teaches “*a first voltage generator having a first coolant path*” as alleged by the Office Action.

FIG. 9

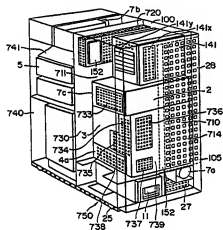
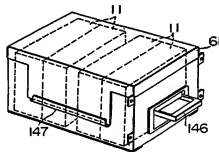
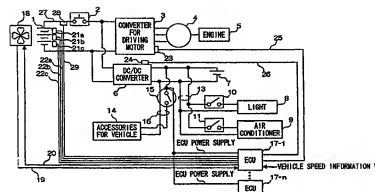


FIG. 63B



Further, the Office Action acknowledges that Komatsu does not disclose the temperature sensors but alleges that Saito cures the deficiencies. But as shown in FIG. 1 of Saito reproduced below, Saito’s battery 1 contains a plurality of temperature sensors 21 to measure the temperature of each battery contained inside the battery 1. See Saito, [0076] (“temperature sensors 21a, 21b, and 21c are provided which measure the temperature of each battery contained in the high-voltage battery 1”). Saito does not disclose or teach “*a first temperature sensor* attached to said first voltage generator; *a second temperature sensor* attached to said first voltage generator *on the coolant discharge side* of said first coolant path, relative to said first temperature sensor.”

FIG. 1



Kato does not cure the deficiencies of either Komatsu or Saito. Kato concerns determining whether a cooling fan has failed by comparing assumed temperature change to an actual temperature change. Kato does not disclose or teach *“a first voltage generator having a first coolant path”* or *“a first temperature sensor attached to said first voltage generator; a second temperature sensor attached to said first voltage generator on the coolant discharge side of said first coolant path, relative to said first temperature sensor.”* Moreover, there is only one cooling fan in Kato, and nothing in Kato discloses or teaches *“said control circuit also operating the other cooling system of said first and second cooling systems even when cooling of the voltage generator corresponding to said other cooling system is unnecessary.”*

The Office Action further cites to Soo and Duncan for subject matters recited in dependent claims. In particular, the Office Action alleges it would have been obvious to one of ordinary skill in the art to modify the DC/DC converter of Komatsu with Soo’s dc-dc converter with two current sensors and to further modify that DC/DC converter to replace the two current sensors by two temperature sensors as allegedly taught by Duncan. The allegations are not supported by the references cited. Duncan merely describes a standard housing assembly that is capable of receiving interchangeable temperature or pressure sensor modules. Even assuming arguendo temperature sensor and current sensors are interchangeable, the Office Action has not pointed out where in the prior art a motivation or reason has been provided to change current sensors in a dc-dc converter to temperature sensors. It is not proper under 35 U.S.C. § 103 to use Applicant’s invention as a blueprint to pick and choose unrelated features of unrelated references to reproduce, in hindsight, Applicant’s invention, without providing any reason in the prior art

itself for making the alleged combination. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Obviousness cannot be sustained on mere conclusory statements.

Moreover, as discussed in MPEP 2143.01, obviousness can only be established by combining or modifying the *teachings of the prior art* to produce the claimed invention where there is some *teaching, suggestion, or motivation* to do so. *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching test as a guard against using hindsight in an obviousness analysis). However, the Office Action *does not* provide any teaching, suggestion, or motivation in the prior art itself to modify Komatsu's computer into a power supply device as claimed. Rather, it appears that Examiner has provided the motivation using the Applicant's own specification as a blueprint.

In any event, neither Soo nor Duncan addresses the deficiencies of Komatsu, Saito and Kato. Accordingly, even if the proposed combination of Komatsu, Saito, Kato, Soo and Duncan, were possible (which is not so admitted), the proposed combination still does not teach each and every claim limitation of the independent claims 1 and 5.

Therefore, for at least these reasons, it is respectfully submitted that claims 1 and 5, as well as their dependent claims, are patentable over the cited references.

c. New Claims 12-18

Method claims 12-18 are new and recite all features presented in claims 5-11 respectively. Accordingly, claims 12-18 are patentable over the cited references at least for the same reasons as discussed above.

V. Conclusion

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance. The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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